What is claimed is:

1. A disk drive motor comprising:

   a rotatable shaft supporting a hub supporting one or more disks for rotation, a sleeve supported from a base defining a bore in which the shaft rotates, a fluid dynamic bearing in the bore between the sleeve and the shaft for supporting the shaft for rotation, the fluid dynamic bearing comprising at least one grooved bearing asymmetrically biased to create pressure gradient and fluid flow toward an end of the shaft, at least one fluid recirculation path extending through the sleeve, and a preloaded pressure regulating obstruction located in the fluid recirculation path, the fluid flow established by the asymmetrical bearing grooves acting to displace obstruction such that force equilibrium is reached, thereby regulating re-circulating pressure.

2. A disk drive motor as claimed in claim 1, wherein a force is applied to the biasing the obstruction against the direction of fluid flow.

3. The disk drive motor of claim 2, wherein the bias force comprises a spring force applied to the obstruction by cantilever deflection of a shield supported from the sleeve.

4. A drive motor as claimed in claim 3, wherein the motor further comprises a seal reservoir defined adjacent an end of the journal bearing and the fluid recirculation path, one surface of the reservoir being defined in an axial surface of the sleeve.

5. The disc drive motor of claim 4 wherein the reservoir is further defined by an axial facing surface of the shield which rests against the obstruction.

6. The disk drive motor of claim 3, wherein the spring force is applied to the obstruction by a cantilever or coil spring.

7. The disk drive motor of claim 3, wherein the obstruction is shaped as a ball or a plunger.

8. The disk drive motor of claim 3 wherein the fluid circulation path extends through the sleeve and is fluidly connected to the reservoir.

9. The disk drive motor of claim 3 wherein the fluid recirculation path includes a seat, and the spring force seats the obstruction in the fluid circulation path until overcome by the pressure gradient of the asymmetrical bearing.

10. A disc drive motor as claimed in claim 2 wherein the rotating shaft includes a thrust bearing defined at an end thereof, the asymmetrical journal bearing having a sufficient asymmetric bias to create a pressure gradient for fluid flow through the fluid circulation path.

11. A disc drive motor as claimed in claim 3 further comprising a thrust plate supported at an end of the shaft distal from the hub, the fluid bearing assembly comprising a thrust bearing defined on a surface of the thrust plate facing the journal bearing and having an opening connecting the journal bearing and the fluid circulation path to permit fluid flow from the journal bearing through the fluid circulation path.

12. A disc drive motor comprising a rotating shaft supporting a hub at an end thereof for supporting one or more discs for rotation, a base, sleeve and defining a bore in which the shaft rotates, the shaft and sleeve defining a gap filled with fluid and the shaft being supported by first and second conical bearings spaced apart along the shaft, a plenum extending radially through

the sleeve, a fluid recirculation path coupling the plenum to a source of atmospheric pressure, and an obstruction in the plenum obstructing passage of the biased to obstruct passage of the fluid from the plenum into the fluid recirculation path.

13. A disc drive motor as claimed in claim 12 wherein the plenum path extends radially through the sleeve to the outer surface of the sleeve, an obstruction being imposed in the path beyond an intersection between the plenum and the fluid recirculation path. The obstruction supporting a spring biasing the obstruction into the plenum opening.

14. A fluid dynamic bearing as claimed in claim 13 wherein at least one of the conical bearings supporting the shaft for rotation is asymmetrically biased to create a pressure gradient and fluid flow toward the junction between the fluid bearing gap and the plenum.

15. A disc drive motor as claimed in claim 14 further comprising a seal reservoir defined by at least one surface of a sleeve, the fluid recirculation path extending from the junction with the plenum to the seal reservoir.

16. A disc drive motor comprising a stationary shaft supported from a base, a rotatable sleeve supported for rotation by a fluid dynamic journal bearing positioned in a gap between the stationary shaft and the rotating sleeve, a fluid recirculation path extending at least partially through the sleeve, and a pressure regulating obstruction located between the fluid recirculation path and the fluid dynamic journal bearing.

17. A disc drive motor as claimed in claim 16 wherein the fluid dynamic journal bearing is asymmetrically biased to promote fluid circulation from

the journal bearing past the pressure regulating obstruction through the fluid recirculation path.

18. A disc drive motor as claimed in claim 17 including a seal defined at least in part by a surface of the sleeve adjacent one end of the journal bearing, the fluid recirculation path extending to the fluid seal reservoir.

19. A disc drive motor as claimed in claim 18 further comprising a plenum extending from the fluid dynamic journal bearing to the fluid recirculation path.

20. A disc drive motor as claimed in claim 19 including a pressure regulating obstruction located in the fluid recirculation path to interrupt fluid flow through the path until the pressure gradient created by the journal bearing overcomes the bias of the obstruction.

21. A disc drive motor as claimed in claim 19 wherein the spring bias of the pressure regulated obstruction is sufficient to maintain a constant hydraulic pressure to augment the start/stop/lift on an end of the shaft.

22. A disc drive motor as claimed in claim 20 wherein the spring bias on the obstruction is sufficient to establish a dash pot damping effect on shock displacement attenuation in a asymmetrically biased journal bearing motor.

23. A fluid dynamic bearing system comprising a shaft, a sleeve defining a bore, a fluid dynamic bearing located in the bore between the sleeve and the shaft for supporting relative rotation, the fluid dynamic bearing comprising at least one grooved surface asymmetrically biased to create pressure gradient and fluid flow toward an end of the shaft, at least one fluid recirculation path, a preloaded obstruction located in the fluid

recirculation path, and a constant pressure region downstream of the obstruction, the fluid flow established by the asymmetrical bearing grooves acting to displace the obstruction until force equilibrium is reached, thereby regulating pressure in the recirculation path.

24. A fluid dynamic bearing as claimed in claim 23, wherein the motor further comprises a seal reservoir defined adjacent an end of the journal bearing and an end of the fluid recirculation path, one surface of the reservoir being defined in an axial surface of the sleeve.

25. A fluid dynamic bearing as claimed in claim 24 wherein the rotating shaft includes a thrust bearing defined at an end thereof, the asymmetrical journal bearing having a sufficient asymmetric bias to create a pressure gradient for fluid flow through the fluid circulation path.

26. A fluid dynamic bearing as claimed in claim 24 further comprising a thrust plate supported at an end of the shaft distal from the hub, the fluid bearing assembly comprising a thrust bearing defined on a surface of the thrust plate facing the journal bearing and having an opening connecting the journal bearing and the fluid circulation path to permit fluid flow from the journal bearing through the fluid circulation path.

27. A fluid dynamic bearing as claimed in claim 24 wherein the preload on the obstruction is sufficient to establish a dash pot damping effect on shock displacement attenuation in the asymmetrically biased journal bearing motor.

28. A fluid dynamic bearing as claimed in claim 24 wherein the preloaded obstruction located in the fluid recirculation path interrupts fluid flow through the path until the pressure gradient created by the journal bearing overcomes the bias of the obstruction.

29. A fluid dynamic bearing comprising one inner and outer member, a bore defined between the inner and outer member, a fluid dynamic bearing supporting relative rotation of the inner and outer members, asymmetry in the bearing region establishing fluid flow, fluid in the bore between the inner and outer members supporting relative rotation thereof, a passageway through which the fluid flows, a preloaded blockage located to be displaced by fluid pressure until force equilibrium in the passageway and the bore is achieved, and a constant pressure region downstream of the obstruction.

30. A fluid dynamic bearing system as claimed in claim 29 wherein the inner member is a shaft, the outer member is a sleeve, and the fluid dynamic bearing comprises a journal bearing.

31. A fluid dynamic bearing system as claimed in claim 30 wherein the passageway is through the sleeve and fluidly connects the journal bearing to a constant pressure region coupled to an end of the journal bearing.